

ABSTRACT

Waste-treatment processes are enhanced through generation and introduction of specific biological populations customized to perform or favor specific tasks either during the main process, or for solids minimization purposes in a post-treatment process. These bacteria may be grown from specialized mixes of activated sludge and waste influent by exposing these materials to controlled environments (e.g., in an off-line treatment area). They may then be added back to the main process to perform certain tasks such as converting particulate cBOD into soluble cBOD for utilization, to reduce high solids yield organisms by supplementing the population with low yield organisms, to improve nitrification/denitrification efficiency, or to disfavor filamentous biology such as *Nocardia* sp..

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